



MEMO

TO: Commissioners
FROM: Tracy Johnson
DATE: 7/16/07
RE: Decision Items related to Sensitivity Analysis

Decision Item

The Evaluation Firm RFP calls for Lewin to conduct sensitivity analysis on some of the key assumptions within its model that drive its cost and coverage outcomes. The Commission needs to provide Lewin some guidance regarding its expectations around sensitivity analysis in its written reports.

Background: What is sensitivity analysis?

Sensitivity analysis refers to the process of quantifying how much a particular modeling assumption drives a particular cost or coverage outcome. Sensitivity analysis focuses on varying (changing) assumptions that are "inside" the model (e.g., controlled by Lewin and not the proposers). These modeling assumptions are based on a review of the research. However, since all research incorporates a certain amount of uncertainty, the purpose sensitivity analysis is to explore how this uncertainty effects the modeling findings re: cost and coverage.

Examples of "inside-the-model" assumptions include:

- take-up rates (what % of people will enroll in new coverage offered to them)
- the effects of cost-sharing on utilization (and therefore costs)
- "crowd-out effects" (public coverage enrollment by people formerly covered by employer-sponsored coverage)
- federal flexibility around existing program rules and funding

"Sensitivity analysis" is distinguished from modeling refinements. Refinements are controlled by the proposer. The decision to provide subsidies, to define the population eligible for subsidies, to expand Medicaid, these are all examples of decisions made by the proposer. If we want these factors changed, it is called a "refinement". Proposers have been working with Lewin on refinements to their proposals throughout July.

Staff Recommendation

The Commission hired Lewin for its expertise in modeling, including familiarity with the relevant health economic and policy literatures. Therefore, staff recommends that the Commission point to areas in which sensitivity analysis is desired and rely on Lewin's expertise for structuring the sensitivity tests.

Staff offers the following general guidance to Lewin. Sensitivity analysis should focus on modeling assumptions that:

- Have a large impact on health care costs or coverage estimates
- Rely on national or regional (rather than Colorado) research
- Have large standard errors (see standard error example)
- Have a small research base (e.g., one or two studies)

Commissioners have thusfar expressed interest in the following topics for sensitivity analysis. To the extent that they are consistent with the above criteria, Lewin should incorporate these areas in their analyses:

- Federal flexibility around program rules and financing
- Coverage estimates
- MEPS premium estimates
- MEPS household estimates (perhaps using Midwest MEPS estimates rather than Western U.S. MEPS estimates)
- Administrative costs
- Take-up rates under voluntary and mandatory systems

Standard Error Example

In the table below we display the standard errors associated with the Premium estimates from the employer survey conducted by the Agency for HealthCare Research and Quality (AHRQ). This is from the Insurance Component of the Medical Expenditure Panel Survey (MEPS-IC).

2004 MEPS Average Premiums and Standard Errors

| | All employees | Under 10 employees | 10-24 employees | 25-99 employees | 100-999 employees | 1,000 or more employees |
|--------------------------|---------------|--------------------|-----------------|-----------------|-------------------|-------------------------|
| Single Coverage | | | | | | |
| <i>Premium Estimates</i> | 3,684 | 4,118 | 3,664 | 3,837 | 3,772 | 3,537 |
| <i>Standard Error</i> | 106.52 | 286.92 | 152.43 | 225.25 | 164.6 | 156.35 |
| Family Coverage | | | | | | |
| <i>Premium Estimates</i> | 10,228 | 10,586 | 9,238 | 9,399 | 11,210 | 10,085 |
| <i>Standard Error</i> | 308.19 | 615.64 | 575.75 | 1,746.03 | 245.68 | 483.11 |